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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,309	10/31/2003	Abdelgader Legnain	77682-224 /pw	9870
7380 7590 08/06/2007 SMART & BIGGAR P.O. BOX 2999, STATION D 900-55 METCALFE STREET OTTAWA, ON K1P5Y6 CANADA			EXAMINER LOUIE, OSCAR A	
			ART UNIT 2136	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/697,309

Applicant(s)

LEGNAIN ET AL.

Examiner

Oscar A. Louie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/1/2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 8, 9, 13, 14, 16, 17, 19, 20 and 23-28 is/are rejected.
- 7) ☒ Claim(s) 3, 6, 7, 10-12, 15, 18, 21, 22 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This second non-final action is in response to the amended filing of 5/1/2007. Claims 1-29 are pending and have been considered as follows.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 9, 13, 14, 16, 24, 27, & 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottomley et al. (US-5550809-A) in view of Falconer et al. (US-5204874-A).

Claim 1:

Bottomley et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information comprising,

- “for each set of M consecutive symbols, performing a first parallel code multiplying operation by multiplying the M symbols by each of the L codewords of the second code, thereby producing L first output symbols, each of the L output first output symbols being associated with one of the L codewords” (i.e. “at a transmitter, a binary information

symbol b (± 1) can be spread by multiplying b with a spreading sequence x ; for example, the spreading sequence x might be $+1, -1, +1, -1$, consisting of four binary chips”) [column 1 lines 25-34];

- “for a set of N consecutive first output symbols associated with the codeword, performing a respective second parallel code multiplying operation by multiplying the set of N consecutive first output symbols by each of the K codewords of the second code to produce a set of K second output symbols, each second output symbol being associated with one of the K codewords and with said codeword of the set of said L codewords” (i.e. “at a transmitter, a binary information symbol b (± 1) can be spread by multiplying b with a spreading sequence x ; for example, the spreading sequence x might be $+1, -1, +1, -1$, consisting of four binary chips”) [column 1 lines 25-34];

but they do not disclose,

- “determining an overall maximum of the second output symbols output of said second parallel code multiplying operations”

however, Falconer et al. do disclose,

- “The predetermined size of the block of data symbols defined by the matrix is derived from the maximum number of data symbols which can be transmitted at a predetermined chip rate within a predetermined length transmission block” [column 6 lines 10-14];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant’s invention to include, “determining an overall maximum of the second output symbols output of said second parallel code multiplying operations,” in the invention as disclosed by Bottomley et al. for the purposes of data rate control.

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Claim 9:

Bottomley et al. and Falconer et al. disclose a method of decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, but their combination do not disclose,

- “performing sequence de-repetition prior to said first parallel code multiplying operation”

however, Falconer et al. do disclose,

- “Particular transmitted signals can be retrieved from the communication channel by despreading a signal representative of the sum of signals in the communication channel with a user spreading code related to the particular transmitted signal which is to be retrieved from the communication channel” [column 3 lines 30-35];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant’s invention to include, “performing sequence de-repetition prior to said first parallel code multiplying operation,” in the invention as disclosed by Bottomley et al. for the purposes of signal enhancing (i.e. desired user signal related to the particular spreading code is enhanced) [column 3 lines 38-40].

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Claim 13:

Bottomley et al. and Falconer et al. disclose a method of decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, further comprising,

- “second parallel code multiplying operation is performed for at least 2 of the L codewords” (i.e. “In this process called “direct spreading”, each spread symbol is essentially the product of an information symbol and the spreading sequence” performing a process for any/all symbols/codewords would imply that this includes any finite subset as well) [column 1 lines 25-34].

Claim 14:

Bottomley et al. and Falconer et al. disclose a method of decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, further comprising,

- “second parallel code multiplying operation is performed for all of the L codewords” (i.e. “In this process called “direct spreading”, each spread symbol is essentially the product of an information symbol and the spreading sequence” performing a process for any/all symbols/codewords would imply that this includes any finite subset as well) [column 1 lines 25-34].

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Claim 16:

Bottomley et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information comprising,

- “a first parallel code multiplier which, for each set of M consecutive symbols, performs a first parallel code multiplying operation by multiplying the M symbols by each of the L codewords of the second code, thereby producing L first output symbols, each of the L output first output symbols being associated with one of the L codewords” (i.e. “at a transmitter, a binary information symbol b (± 1) can be spread by multiplying b with a spreading sequence x ; for example, the spreading sequence x might be $+1, -1, +1, -1$, consisting of four binary chips”) [column 1 lines 25-34];
- “a second parallel code multiplier which, for each of at least one codewords of said set of L codewords, performs: for a set of N consecutive first output symbols associated with the codeword, a respective second parallel code multiplying operation by multiplying the set of N consecutive first output symbols by each of the K codewords of the second code to produce a set of K second output symbols, each second output symbol being associated with one of the K codewords and with said codeword of the set of said L codewords” (i.e. “at a transmitter, a binary information symbol b (± 1) can be spread by multiplying b with a spreading sequence x ; for example, the spreading sequence x might be $+1, -1, +1, -1$, consisting of four binary chips”) [column 1 lines 25-34];

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but they do not disclose,

- “wherein an overall maximum of the second output symbols output of said second parallel code multiplying operations is selected”

however, Falconer et al. do disclose,

- “The predetermined size of the block of data symbols defined by the matrix is derived from the maximum number of data symbols which can be transmitted at a predetermined chip rate within a predetermined length transmission block” [column 6 lines 10-14];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant’s invention to include, “wherein an overall maximum of the second output symbols output of said second parallel code multiplying operations is selected,” in the invention as disclosed by Bottomley et al. for the purposes of data rate control.

Claim 24:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- “a sequence de-repetition function adapted to perform sequence de-repetition prior to said first parallel code multiplier”

however, Falconer et al. do disclose,

- “Particular transmitted signals can be retrieved from the communication channel by despread a signal representative of the sum of signals in the communication channel

with a user spreading code related to the particular transmitted signal which is to be retrieved from the communication channel” [column 3 lines 30-35];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant’s invention to include, “a sequence de-repetition function adapted to perform sequence de-repetition prior to said first parallel code multiplier,” in the invention as disclosed by Bottomley et al. for the purposes of signal enhancing (i.e. desired user signal related to the particular spreading code is enhanced) [column 3 lines 38-40]..

Claim 27:

Bottomley et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, further comprising,

- “second parallel code multiplying operation is performed for at least 2 of the L codewords” (i.e. “In this process called “direct spreading”, each spread symbol is essentially the product of an information symbol and the spreading sequence” performing a process for any/all symbols/codewords would imply that this includes any finite subset as well) [column 1 lines 25-34].

Claim 28:

Bottomley et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, further comprising,

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- “second parallel code multiplying operation is performed for all of the L codewords” (i.e. “In this process called "direct spreading", each spread symbol is essentially the product of an information symbol and the spreading sequence” performing a process for any/all symbols/codewords would imply that this includes any finite subset as well) [column 1 lines 25-34].

3. Claims 2, 4, 5, 8, 17, 19, 20, 23, 25, & 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottomley et al. (US-5550809-A) in view of Falconer et al. (US-5204874-A) and in further view of Gilhousen (US-5103459-A).

Claim 2:

Bottomley et al. and Falconer et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, but their combination do not disclose,

- “the first code is a Walsh code, and the second parallel code multiplying operation comprises a FHT”

however, Gilhousen does disclose,

- “In the 64-ary orthogonal signalling process, the mobile unit transmitted symbols are encoded into one of 2.sup.6, i.e. 64, different binary sequences. The set of sequences chosen are known as Walsh functions. The optimum receive function for the Walsh function m-ary signal encoding is the Fast Hadamard Transform (FHT)” [column 15 lines 22-27];

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Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first code is a Walsh code, and the second parallel code multiplying operation comprises a FHT," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of efficiency/speed.

Claim 4:

Bottomley et al. and Falconer et al. disclose a method of decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, but their combination do not disclose,

- "the second code is a Walsh code, and the first parallel code multiplying operation comprises a FHT"

however, Gilhousen does disclose,

- "In the 64-ary orthogonal signalling process, the mobile unit transmitted symbols are encoded into one of 2.sup.6, i.e. 64, different binary sequences. The set of sequences chosen are known as Walsh functions. The optimum receive function for the Walsh function m -ary signal encoding is the Fast Hadamard Transform (FHT)" [column 15 lines 22-27];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the second code is a Walsh code, and the first parallel code multiplying operation comprises a FHT," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of efficiency/speed.

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Claim 5:

Bottomley et al. and Falconer et al. disclose a method of decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, but their combination do not disclose,

- “the second code is an orthogonal code”

however, Gilhousen does disclose,

- “The signals are also spread with an inner orthogonal code generated by using Walsh functions” [column 10 lines 6-7];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant’s invention to include, “the second code is an orthogonal code,” in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. since Walsh functions generate orthogonal code.

Claim 8:

Bottomley et al. and Falconer et al. disclose a method of decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 2 above, but their combination do not disclose,

- “the first code is an 8-Walsh code, and the second code is an 8-Walsh code”

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however, Gilhousen do disclose,

- “The signals are also spread with an inner orthogonal code generated by using Walsh functions” [column 10 lines 6-7].

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant’s invention to include, “the second code is an orthogonal code,” in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. since “Walsh functions” implies any size or variant type of Walsh function.

Claim 17:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- “the first code is a Walsh code, and the second parallel code multiplying operation comprises a FHT”

however, Falconer et al. do disclose,

- “In the 64-ary orthogonal signalling process, the mobile unit transmitted symbols are encoded into one of $2^{\text{sup.6}}$, i.e. 64, different binary sequences. The set of sequences chosen are known as Walsh functions. The optimum receive function for the Walsh function m -ary signal encoding is the Fast Hadamard Transform (FHT)” [column 15 lines 22-27];

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Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first code is a Walsh code, and the second parallel code multiplying operation comprises a FHT," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of efficiency/speed.

Claim 19:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- "the second code is a Walsh code, and the first parallel code multiplying operation comprises a FHT"

however, Falconer et al. do disclose,

- "In the 64-ary orthogonal signalling process, the mobile unit transmitted symbols are encoded into one of 2^{sup.6}, i.e. 64, different binary sequences. The set of sequences chosen are known as Walsh functions. The optimum receive function for the Walsh function m -ary signal encoding is the Fast Hadamard Transform (FHT)" [column 15 lines 22-27];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the second code is a Walsh code, and the first parallel code multiplying operation comprises a FHT," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of efficiency/speed.

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Claim 20:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- “the second code is an orthogonal code”

however, Falconer et al. do disclose,

- “The signals are also spread with an inner orthogonal code generated by using Walsh functions” [column 10 lines 6-7];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant’s invention to include, “the second code is an orthogonal code,” in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. since Walsh functions generate orthogonal code .

Claim 23:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 17 above, but their combination do not disclose,

- “the first code is an 8-Walsh code, and the second code is an 8-Walsh code”

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however, Gilhousen do disclose,

- “The signals are also spread with an inner orthogonal code generated by using Walsh functions” [column 10 lines 6-7];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant’s invention to include, “the second code is an orthogonal code,” in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. since Walsh functions implies any size or type of Walsh function.

Claim 25:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- “the first information comprises a channel quality indication, and wherein the second information comprises a sector identifier”

however, Falconer et al. do disclose,

- “Each cell-site also transmits spread spectrum modulated information, such as cell-site identification, system timing, mobile paging information and various other control signals...a signal quality” [column 5 lines 58-62 & column 16 line 46];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first information comprises a channel quality indication, and wherein the second information comprises a sector identifier," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of determining signal quality and other information.

Claim 26:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding $M \times N$ symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- "the first information comprises a data rate control indication, and wherein the second information comprises a sector identifier"

however, Falconer et al. do disclose,

- "Each cell-site also transmits spread spectrum modulated information, such as cell-site identification, system timing, mobile paging information and various other control signals...a signal quality" [column 5 lines 58-62 & column 16 line 46];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first information comprises a data rate control indication, and wherein the second information comprises a sector identifier," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of determining signal quality and other information.

Allowable Subject Matter

4. Claims 3, 6, 7, 10-12, 15, 18, 21, 22, & 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Applicant's arguments, see pages 12-17 of the applicant's remarks/arguments, filed 5/01/2007, with respect to the rejection(s) of claim(s) 1-29 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Bottomley et al. (US-5550809-A) in view of Falconer et al. (US-5204874-A) and in further view of Gilhousen (US-5103459-A).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Oscar Louie whose telephone number is 571-270-1684. The examiner can normally be reached Monday through Thursday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami, can be reached at 571-272-4195. The fax phone number for Formal or Official faxes to Technology Center 2100 is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

OAL
08/01/2007

Nasser Moazzami
Supervisory Patent Examiner


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